

BIOCOMPATIBLE DENATURED ALBUMIN LAMINA AND METHOD

ABSTRACT OF THE INVENTION

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The present invention provides a denatured albumin lamina, useful for repairing lesions on solid visceral organs. The lamina comprises human serum albumin, formed into a thin, pliant sheet and denatured. The denatured lamina can be sterilized and stored until used. As well, it can be impregnated with a variety of bioagents.

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In another aspect of the present invention, a method is provided for manufacturing the denatured albumin lamina. The method comprises placing a quantity of 50% to 60% (preferably 53%–55%) albumin solution between two nonporous sheets, then spreading the albumin solution between the sheets to a selected and substantially uniform thickness, e.g., 200 μm . The albumin solution sandwich thus formed is placed into a container, which is then evacuated. The sandwich is heated (cured), by autoclaving or immersion in a water bath of at least 86°C (preferably 90°C for five minutes). Denaturation of the entrapped albumin solution changes its state from a viscous liquid to a flexible solid with tensile strength and pliability. Ultimate strength of the flexible solid lamina is directly related to starting albumin solution concentration, curing temperature and curing time.

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Another aspect of the present invention is a method comprising welding the albumin lamina to a lesion site on a solid visceral organ. A laser solder can be deployed beneath the lamina to aid in welding it to the organ surface using laser light energy.

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